Wolff, Bregman and Goller

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Authorized Officer
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VIA FACSIMILE
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Confirmation Via Air Mail

Dear Sirs:

Re: International Application No. PCT/IL2004/000813
For: **SUBSTRATE-GUIDED OPTICAL DEVICES**
in the name of ***LUMUS LTD.***
Our File: 157,837 PCT(a)

We wish to file an amendment of the claims under Article 19.

Enclosed please find a first set of claims on pages 19 and 20, clearly showing the amendments performed and a second set, in triplicate, in which the brackets and underlining showing the amendments, were deleted.

Respectfully yours
WOLFF, BREGMAN AND GOLLER
by:

Zwi Bregman, Patent Attorney

IAP20 Rec'd PCT/PTO 19 DEC 2005

WHAT IS CLAIMED IS:

1. An optical device, comprising

a light-transmitting substrate having at least two major surfaces parallel to each other and edges;

optical means for coupling light waves located in a field-of-view into said substrate by internal reflection, and

at least one partially reflecting surface located in said substrate which is non-parallel to said major surfaces of the substrate,

characterized in that at least one of said major surfaces is coated with a [dichroic] angular sensitive coating.

[2. The optical device according to claim1, wherein said dichroic coating is an angular sensitive coating.]

[3]2. The optical device according to claim 1, wherein said major surface has a negligible reflection for one part of the angular spectrum and a significant reflection for other parts of the angular spectrum.

[4]3. The optical device according to claim 1, wherein said major surface has a low reflectance at low incident angles and a high reflectance at high incident angles.

[5]4. The optical device according to claim 1, wherein said angular sensitive coating causes the entire field-of-view to be trapped inside said substrate by internal reflections.

[6]5. The optical device according to claim 1, wherein said at least one partially reflecting surface couples light trapped by internal reflection out of said substrate.

[7]6. The optical device according to claim [2] 1, wherein said angular sensitive coating causes the entire field-of-view to exit said substrate at a predetermined location for reaching at least one eye of an observer.

[8]7. The optical device according to claim [2] 1, wherein said angular sensitive coating is formed by utilizing an ion-assisted coating procedure.

[9]8. The optical device according to claim 1, further comprising a display light source.

[10]9. The optical device according to claim [9] 8, wherein said display light source is a liquid crystal display.

[11]10. The optical device according to claim [9] 8, wherein said display light source is an organic light emitting diode display.

[12]11. The optical device according to claim 1, wherein said substrate is partially transparent, to enable see-through operation.

[13]12. The optical device according to claim 1, further comprising an opaque surface located on or in said substrate, so as to block the entrance of light traversing the substrate from an external scene.

[14]13. The optical device according to claim 1, further comprising a variable transmittance surface located so as to attenuate the entrance of light traversing the substrate, for controlling brightness of light passing through said device from an external scene.

[15]14. The optical device according to claim [14] 13, wherein the transmittance of said variable transmittance surface is determined according to the brightness of light directed to traverse the substrate.

[16]15. The optical device according to claim 1, wherein said device is mounted in an eyeglasses frame.

[17]16. The optical device according to claim 1, wherein said device is located in a head-up-display.

WHAT IS CLAIMED IS:

1. An optical device, comprising

a light-transmitting substrate having at least two major surfaces parallel to each other and edges;

optical means for coupling light waves located in a field-of-view into said substrate by internal reflection, and

at least one partially reflecting surface located in said substrate which is non-parallel to said major surfaces of the substrate,

characterized in that at least one of said major surfaces is coated with a angular sensitive coating.

2. The optical device according to claim 1, wherein said major surface has a negligible reflection for one part of the angular spectrum and a significant reflection for other parts of the angular spectrum.

3. The optical device according to claim 1, wherein said major surface has a low reflectance at low incident angles and a high reflectance at high incident angles.

4. The optical device according to claim 1, wherein said angular sensitive coating causes the entire field-of-view to be trapped inside said substrate by internal reflections.

5. The optical device according to claim 1, wherein said at least one partially reflecting surface couples light trapped by internal reflection out of said substrate.

6. The optical device according to claim 1, wherein said angular sensitive coating causes the entire field-of-view to exit said substrate at a predetermined location for reaching at least one eye of an observer.

7. The optical device according to claim 1, wherein said angular sensitive coating is formed by utilizing an ion-assisted coating procedure.

8. The optical device according to claim 1, further comprising a display light source.

9. The optical device according to claim 8, wherein said display light source is a liquid crystal display.

10. The optical device according to claim 8, wherein said display light source is an organic light emitting diode display.

11. The optical device according to claim 1, wherein said substrate is partially transparent, to enable see-through operation.

12. The optical device according to claim 1, further comprising an opaque surface located on or in said substrate, so as to block the entrance of light traversing the substrate from an external scene.

13. The optical device according to claim 1, further comprising a variable transmittance surface located so as to attenuate the entrance of light traversing the substrate, for controlling brightness of light passing through said device from an external scene.

14. The optical device according to claim 13, wherein the transmittance of said variable transmittance surface is determined according to the brightness of light directed to traverse the substrate.

15. The optical device according to claim 1, wherein said device is mounted in an eyeglasses frame.

16. The optical device according to claim 1, wherein said device is located in a head-up-display.